

The Transfusion Decision: Ensure that blood products are given only when clearly indicated - when the expected benefits to the patient are likely to outweigh the potential hazards. When in doubt ask for help! (eg patient's Specialist/Registrar and/or a Haematologist/Registrar)

NHMRC/ASBT Clinical Practice Guidelines on the Use of Blood Components (www.anzsb.org.au) provide recommendations and a list of circumstances under which the use of blood components could be accepted as appropriate therapy. It is important to note that:

- They are not intended to serve as strict indications for their use, since not all patients who fulfil the criteria would actually benefit from transfusion. Conversely in selected cases, such therapy may be appropriate for a patient who does not fulfil the criteria.
- They are not applicable to most acute situations, or to specialty areas such as paediatrics and obstetrics. However the general principles may apply - check what local guidelines are in place in the clinical area you are working/practising in.

Example checklist for prescribing blood in non-urgent situations

(know your hospital's procedure)

If blood is needed urgently contact the transfusion service immediately by phone.

Decide and discuss with patient / relatives

- Assess the patient's clinical need for blood and when it is required. If in doubt always ask!
- Obtain informed consent from the patient and/or relatives (risks, benefits, alternatives, questions, anything not understood- refer to the BloodSafe consent card for doctors).
- Supply written information such as the NHMRC patient leaflet or the hospital's own.
- Obtain signed consent (as per hospital policy).

Check for special requirements

- Ask the patient/relatives if there have been any previous problems with transfusion or known antibodies. If transfused or pregnant in the last 3 months a new transfusion specimen is generally needed every 72 hours rather than every 7 days (to detect newly forming antibodies).
- Select the blood product and quantity required including any special requirements, eg. irradiated, CMV negative (refer to hospital/clinical unit guidelines).
- Use a blood ordering schedule, if in place at your hospital, (available from your transfusion service provider) to guide transfusion requirements for common surgical procedures (indicates the number of units to be cross-matched).

Document in casenotes and write the prescription

- Record the indications (clinical and lab) for transfusion in the patient's case notes (eg use the BloodSafe sticker).
- Record relevant details about the informed consent process and file the signed consent form.
- Write a legible and signed order for the transfusion on the chart including product type, infusion time and any special requirements/premedication. Clearly record your name and pager number.

Complete the request form and ensure a current specimen is available

- Complete the blood request form clearly including the reason for transfusion and past transfusion history (so the transfusion service can select the most suitable product).
- Indicate any special requirements eg CMV Neg, irradiated.
- Check whether a current transfusion specimen is available (group & save/screen also called a type & screen/hold).
- Obtain and correctly label a blood sample for compatibility testing if required - sign the specimen tube and request form as your declaration as the collector that patient ID has been checked (see warning below in the red box).
- Send the blood request form and blood sample to the transfusion service provider.

Communicate with nursing and transfusion service staff

- Inform the patient's nurse in person where possible and indicate the urgency - Avoid transfusing overnight if the patient can safely wait till the next morning.
- Ensure the product has been ordered with the transfusion service provider.

RECOGNISE, RESPOND IMMEDIATELY AND REPORT ANY ADVERSE EFFECT (TO TRANSFUSION SERVICE).

FAILURE TO CHECK CAN BE FATAL

**Verify patient identity at all steps of the transfusion process including specimen collection.
Ask patient to state/ spell their full name and DOB (if able) and check their ID band.**

Prescribing a transfusion continued...

Red Blood Cells:

Product: Red Cells (write "red cells" on the chart) are prepared from a whole blood donation (most of the plasma has been removed). The terms "ABP" and "PC" are confusing/ambiguous and should not be used.

- Note that autologous blood is maybe whole blood (write "autologous whole blood" on the chart).

Dose:

- The volume of a RC unit varies and is printed on the pack label (around about 240 mL) and it is expected that one unit would raise the Hb of an average sized adult by about 10g/L (1g/dL).
- Dose of red cells is based on the patient's Hb level and volume requirements. For paediatric patients the following formula is often used: Volume of packed cells (mL) = 0.4 x weight (kg) x desired increase in Hb (g/L). Paediatric packs contain ¼ of an adult pack (adult unit split into 4 bags).
- Administer Red Cells **one unit at a time in non-urgent/ non-bleeding /inpatient settings**. Assess patient prior to transfusing additional units (symptoms, signs and Hb level).

Timing:

- In non-urgent/non-bleeding/inpatient settings red cells should be transfused during **daytime hours** (for patient safety).
- Rate depends on patient's blood volume, cardiac and haemodynamic status. If rapid transfusion is needed, blood can be given as rapidly as the patient's circulatory system will tolerate.
- In the non-urgent/non-bleeding setting each unit is usually infused over 2 hrs in adults, but **always within 4 hrs. Consider the slower rate for patients at risk of circulatory overload.**
- Start red cells within 30 minutes of removing from monitored refrigeration. ("30 minute" and "4 hour rule" are to reduce the risk of bacterial contamination of the unit).
- Except for urgent restoration of blood volume the first 25-50 mL should be given slowly and the patient closely observed (particularly in the first 15 min) as per hospital/clinical unit protocols.
- *Note: If the patient is not adequately volume resuscitated, the Hb value may be spuriously high OR, in the setting of over hydration, spuriously low. False low Hb value may also result if test samples are taken near a site of IV infusion.*

Platelets:

Product: A Platelet Concentrate (write this or "platelets" on the chart) can be made in 2 different ways (pooled from about 4 whole blood donations or collected from 1 donor by apheresis) but the finished pack for adult use contains 'one standard adult dose'. The volume varies but is written on the bag.

Dose:

- Given as 1 standard adult dose (1 adult pack) at a time to adult patients. In a 60-70 kg adult one standard adult dose should raise the platelet count by 20-40 x 10⁹/L. Increment will be less if there is splenomegaly, DIC, sepsis. Paediatric dosing: 1 paediatric pack (¼ of the adult dose) per 10 kg body weight is often used (check the recommendation of your hospital/clinical area).

Timing:

- Begin as soon as the pack arrives (**never refrigerate**) and transfuse slowly initially, where possible, and observe patient closely (particularly for the first 15 min) as per hospital/clinical unit protocol.
- Proceed as fast as tolerated, usually over about 30-60 minutes in adults (maximum 4 hours).

Fresh Frozen Plasma (FFP):

Product: FFP (write this or "fresh frozen plasma" on the chart) is the plasma separated from a single whole blood donation (or collected by apheresis) and rapidly frozen. The volume is about 300mL and is written on the bag. Order the dose in mL's (see below) and the transfusion service can provide the appropriate number of bags to approximate this. Repeat coagulation tests 10-60 minutes post infusion.

Dose:

- Consult an expert. Average dose is 10-15 mL/kg. In the adult setting transfusion laboratory services will match as close as possible to mls required for a patient. Administer the entire bag of plasma.

Timing:

- Recommended infusion time is 30 to 120 min in adults (maximum time 4 hrs). Transfuse slowly initially where possible. Monitor patient closely (esp in the first 15 min) as per hospital protocol.
- *Note: FFP is frequently used inappropriately, either in respect to the particular indication or in excessive quantity. There are also a number of clinical situations in which FFP has been advocated but has not shown to be of benefit or alternative therapies are equally satisfactory or safer. When in doubt always ask. See NHMRC/ASBT guidelines/ pocket card for indications (www.anzsb.org.au)*

More Info? Ask your transfusion service provider/haematologist or visit: www.transfusion.com.au



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